

- 11 -

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Patent claims

- Sub B2
1. Device for the DC-decoupled connection of a telephone line (5) to a signal processing device (6) at the subscriber end of the telephone line, comprising a first circuit (1), which is connected to the telephone line (5); a second circuit (2), which is connected to the signal processing device (6); the first circuit (1) exhibiting a hybrid circuit (7) for separating the signals of the telephone line in a first signal path which extends from the telephone line (5) to the signal processing device (6), and into a second signal path which extends from the signal processing device (6) to the telephone line (5); and comprising a transformer (3) which exhibits a first and a second winding; the first winding being connected to the first circuit (1) and the second winding being connected to the second circuit; the first and second winding being DC-decoupled from one another; the first and second circuits (1, 2) being designed in such a manner that the signals of the first and second signal paths can be transmitted bi-directionally by a time-division multiplex method or a frequency-division multiplex method decoupled via the transformer (3) for both directions of transmission.
2. Device according to Claim 1, characterized in that the first circuit (1) in the first signal path exhibits an analog/digital converter (19) which follows the hybrid circuit (7), and the first circuit (1) in the second signal path exhibits a digital/analog converter (20) which precedes the hybrid circuit.

AMENDED SHEET

- 12 -

Sub B2

3. Device according to Claim 2, characterized in that the output of the analog/digital converter (19) and the input of the digital/analog converter (20) are connected to a first digital signal multiplexer (17) which, in turn, is connected to the first winding of the transformer (3).

4. Device according to Claim 3, characterized in that the signal multiplexer (17) is operated in such a manner that the first and the second signal path are alternately connected to the transformer (3).

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5. Device according to one of the preceding claims, characterized in that the second circuit (2) exhibits a second digital signal multiplexer (18) which is connected to the second winding of the transformer (3).

6. Device according to one of the following claims, characterized in that the second circuit (2) exhibits an oscillator circuit (14) which provides the clock for the second digital signal multiplexer (18).

Sub B2

7. Device according to Claim 6, characterized in that the first digital signal multiplexer (17) exhibits a clock recovery circuit which recovers the clock of the oscillator circuit (14, 15) and provides it to the first circuit (1).

8. Device according to one of the preceding claims, characterized in that

AMENDED SHEET